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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,453	07/18/2003	Jun-Ming Chen	4425-308	1129
7590	07/14/2004			
LOWE HAUPTMAN GILMAN & BERNER, LLP 1700 Diagonal Road, Suite 310 Alexandria, VA 22314			EXAMINER NGUYEN, SANG H	
			ART UNIT 2877	PAPER NUMBER

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/621,453

Applicant(s)

CHEN ET AL.

Examiner

sang nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-12 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____


GREGORY J. TOOLEY, JR.
PRIMARY EXAMINER

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yen et al (U.S. Patent No. 6,236,327).

Regarding claim 1, Yen et al discloses an apparatus for detecting wafer position, comprising:

- a first sensor group (5 of figure 4) having at least one first light emitter (17 of figure 4) and at least one first receiver (15 of figure 4) to detect a first wafer position (3a of figure 5); and
- a second sensor (7 of figure 4) having at least one second light emitter (27 of figure 4) and at least one second receiver (25 of figure 4) to detect a second wafer position (3a of figure 5). See figures 1-5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yen et al (U.S. Patent No. 6,236,327) in view of Mokuo et al (U.S. Patent No. 5,319,216) and Freerks et al (U.S. Patent No. 5,980,194).

Regarding claims 2 and 4; Yen et al discloses all of features of claimed invention except for the first/second light emitter is at one side beside the wafer and the first/second light receiver is at height with the first/second light emitter at the opposing side beside the wafer, and the first/second light emitter and first/second light receiver for detecting the first/second wafer position by determining whether the wafer blocks light emitted by the first/second light emitter. However, Mokuo et al teaches that it is known in the art to provide the first/second light emitter (E1/E2 of figures 2-3) is at one side beside the wafer (W of figure 2) and the first/second light receiver (R1/R2 of figures 2-3) is at height with the first/second light emitter (E1/E2 of figure 2) at the opposing side beside the wafer (W of figure 2), and the first/second light emitter (E1/E2 of figures 2-3) and first/second light receiver(R1/R2 of figures 2-3) for detecting the first wafer (W1/W2 of figure 3) position by determining whether the wafer blocks light emitted by the first/second light emitter (E1/E2 of figures 2-3 and 21 and col.14 lines 1-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an apparatus for detecting wafer position of Yen et al with first light emitter is at one side beside the wafer and the first light receiver is at height with the first light emitter at the opposing side beside the wafer, and the first light emitter and first light receiver for detecting the first wafer position by determining whether the wafer

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blocks light emitted by the first light emitter as taught by Mokuo et al for the purpose of detecting the state of each of position wafer.

Regarding claims 3 and 5; Yen et al discloses all of features of claimed invention except for the first/second light emitter neighbors the first/second light receiver vertically at the same side beside the wafer, the first/second light emitter and the first/second receiver detect the first/second wafer position by determining whether the first light receiver receives the light emitted from the first/second emitter and reflected by the wafer. However, Freerks et al teaches it is known in the art to provide plurality of sensor unit (60 of figure 4A), wherein each of plurality of the sensor unit (60 of figure 3A) having first/second light emitter (E of figure 3A) and first/second light receiver (D of figure 3A) such that the first/second light emitter (E of figure 3A) neighbors the first/second light receiver (D of figure 3A) vertically at the same side beside the wafer (10 of figure 3A), the first/second light emitter (E of figures 3A and 4A) and the first/second receiver (D of figures 3A and 4A) detect the first/second wafer (10 of figure 3A) position by determining whether the first/second light receiver (D of figure 3A) receives the light emitted from the first/second emitter and reflected by the wafer (10 of figure 3A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an apparatus for detecting wafer position of Yen et al with the first/second light emitter neighbors the first/second light receiver vertically at the same side beside the wafer, the first/second light emitter and the first/second receiver detect the first/second wafer position by determining whether the first light receiver

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receives the light emitted from the first/second emitter and reflected by the wafer as taught by Freerks et al for the purpose of detecting and correcting wafer position errors.

Allowable Subject Matter

Claims 6-12 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: as independent claim 6, the prior art of record, taken alone or in combination, fails discloses or render obvious a method for detecting wafer position comprising all the specific elements with the specific combination including of *in abnormal situation, when two opposing sides of the wafer are not the same height level, the wafer does not simultaneously block a plurality of light beams emitted by a plurality of the first light emitters of the first sensor group and does not simultaneously block a plurality of light beams emitted by plurality of the light emitters of the second sensor group, or the wafer simultaneously blocks the light beams emitted by the first sensor group and light beams emitted by the second sensor group, and the time interval between the trigger of the first sensor group and the trigger of the second sensor group deviates the predetermined time interval, at the moment, the robot blade and wafer lifter are stopped by equipment including the wafer lifter and the equipment alarms to people in a operating line to proceed with trouble shooting* in combination with the rest of the limitation of claim 6.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sagues et al (6,075,334) discloses automatic calibration system for wafer transfer robot; Shatas (5783834) discloses method and process for automatic

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training of precise spatial locations to a robot; Birner et al (5605428) discloses device indexing magazine compartments and wafer shape objects; Cheng (5546179) discloses method and apparatus for mapping the edge and other characteristics of a workpiece; Brickell et al (5466945) discloses apparatus for detecting proper positioning of objects in a holder; or Gotoh (4899195) discloses method of exposing a peripheral.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Sang Nguyen whose telephone number (571) 272-2425. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Frank Font, can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

SN

Nguyen/sn

July 8, 2004


Supervisory Patent Examiner
Art Unit 2877
Technology Center 2800

GREGORY J. TOATLEY, JR.
PRIMARY EXAMINER